



SAN DIEGO UNIFIED SCHOOL DISTRICT Energy Management Plan

January 9, 2014





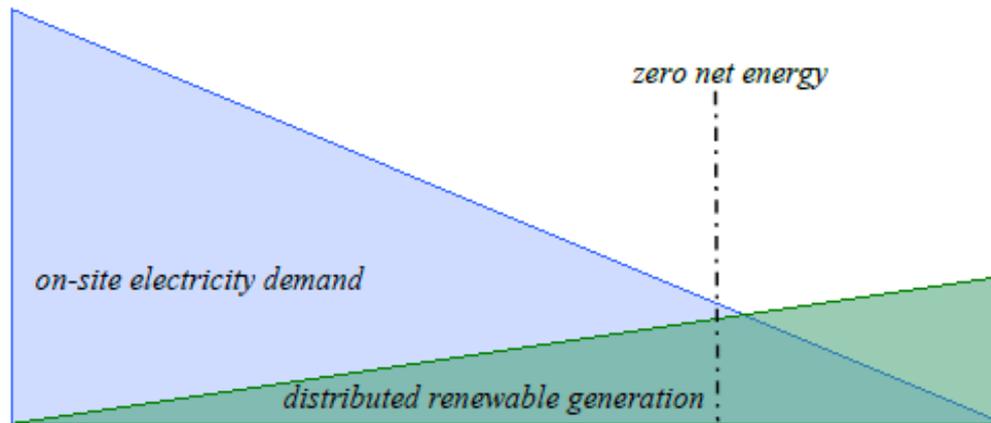
Vision Statement



- ▶ Support Vision 2020, Quality Schools In Every Neighborhood, through sustainability initiatives, leveraging internal and external funding to provide high quality and energy efficient educational environments, supporting student achievement, while decreasing general fund expenditures and setting the vision towards Zero Net Energy (ZNE) (consumption = generation) for San Diego Unified schools.

WHAT IS ZERO NET ENERGY?

Zero net energy is a general term applied to a building with a net energy consumption of zero over a typical year. To cope with fluctuations in demand, zero energy buildings are typically envisioned as connected to the grid, exporting electricity to the grid when there is a surplus, and drawing electricity when not enough electricity is being produced.



- The amount of energy provided by on-site renewable energy sources is equal to the amount of energy used by the building.
- A ZNE building may also consider embodied energy – the quantity of energy required to manufacture and supply to the point of use, the materials utilized for its building.²⁹



Presentation Goals



- ▶ Recognize the successful past of the District's energy/utility management
- ▶ Overview the current state of the District's energy management and sustainability initiatives
- ▶ Frame District future vision and opportunities for energy sustainability
- ▶ Today's steps to energy sustainability:
 - ▶ Stand-up Prop-39 (California Clean Energy Jobs Act) planning resources*
 - ▶ Generate General Fund Unrestricted (GFU) Savings this fiscal year



*Different from Prop-39 Charter schools



Prior Energy/Utilities Management

- ▶ San Diego Unified School District's, Physical Plant Operations, Energy/Utilities Management (E/UM) Section manages various sustainability initiatives including:
 - Energy Management Control Systems
 - District-wide Lighting Relamp
 - Energy Star Program
 - Photovoltaic/cool roofs
 - Rubbish recycling program
 - Educational energy efficiency aspects

- ▶ Unfortunately beginning 2011 the E/UM positions are reduced from 11 FTE to 6 FTE by budget shortfalls.





Current Opportunities



- ▶ Coordinate with the Environmental Sustainability Advisory Committee (ESAC) on recommendations for potential measures to decrease or contain operational costs and reduce the District's environmental footprint.
- ▶ Proposition S & Z bond programs provide sustainable design and construction following the Collaborative for High Performance Schools (CHPS) standards.
- ▶ Proposition Z specifically allocated \$177 million over the next 14 years for Energy Efficiency and Sustainability.
- ▶ Prop 39, California Clean Energy Jobs Act will appropriate an estimated \$30 million over the next 5 years for energy management and energy projects.
- ▶ Rejuvenate San Diego Unified with resources for sustainability as Proposition 39 funding can be used for Energy Managers and energy efficiency training for classified employees over the next 5-years.
- ▶ These opportunities would reduce or avoid energy/utility costs and reduce the draw on GFU now and align with the sustainability vision.





Potential District General Fund Unrestricted Savings

- ▶ The table below highlights the plan of potential GFU savings for initiatives provided by Proposition Z (future years) and Prop-39 beginning in FY 13/14

| Potential Future Costs Savings | | | | |
|---|----------------------|-----------------------|--|--------------------------------|
| Scope Description | Capital Upgrade Cost | Potential GFU Savings | Current Funding | Future Cost & Funding Options |
| Install New District Owned PV Panels | \$68.4M | \$1.9M | GFU | Free energy (some maintenance) |
| Buy-out Existing Power Purchase Agreements | \$27.1M | \$1.1M | GFU | Free energy (some maintenance) |
| Demand Control Ventilation (CO2) | \$8.6M | \$820K | GFU | GFU utility cost reduction |
| Solar Lighting | \$32.4M | \$1.6M | GFU | GFU utility cost reduction |
| Re-Lamping w/LED | \$30.2M | \$1.3M | GFU | GFU utility cost reduction |
| Water Systems Upgrades (recycled, low flow, etc.) | \$10.4M | \$754K | GFU | GFU utility cost reduction |
| Energy program management | \$3M | \$300K | Unfunded | Prop-39 |
| Auditing, benchmarking and tracking | \$3M | \$100K | Unfunded | Prop-39 |
| Lighting and lighting controls upgrades | \$15M | \$1.5M | Unfunded | Prop-39 |
| HVAC & HVAC controls upgrades | \$3.5M | \$1M | Unfunded | Prop-39 |
| Low cost Energy Efficiency Measures | \$1.5M | \$200K | Unfunded | Prop-39 |
| Energy training and program Contingency | \$4M | \$200K | Unfunded | Prop-39 |
| | \$207.1M | \$10.8M | Projected Annual Savings Prop-Z: \$7.5M, Prop-39: \$3.3M | |

Note/Disclaimer: the potential annual savings described above are estimates based on current costs and utility rates that are subject to change actual/savings; the potential savings described above will not be realized immediately, actual saving realized will ramp up over time as systems are installed and/or changes implemented; for the aforementioned reasons the savings listed above should not be used for general fund budgeting purposes





Proposition 39 Planning Actions

- ▶ Support planning actions and quick start energy savings projects:
 - ▶ Utilize Prop-39 energy management resources to implement the low-cost and no-cost savings reductions
 - ▶ Utilize Prop-39 planning funds for work that began July 1, 2013
 - ▶ Review current audits and implement high ROI measures
 - ▶ Continue planning and implement the re-lamp up to 1/3 of the district classrooms this summer
 - ▶ Continue Preparing the five-year Prop-39 implementation plan

Note: Planning, surveys, audits, benchmarking, prioritization, and sequencing are all required by prop-39 guidelines and will guide these actions.





Summary

- ▶ District's Energy Sustainability Goals and Objectives can be summarized as follows:
 - ▶ Accelerate GFU Savings and Offsets
 - ▶ Prioritize Energy Efficiency Measures through Prop 39 Implementation
 - ▶ Maximize the Distributive Generation and Energy Efficiency Measures of Prop Z toward ZNE
 - ▶ Analyze the San Diego Unified's viability to align with the state of California's goal of Zero Net Energy by 2030





What the Future Holds



- ▶ Provide long range roadmap via collaborative work with the ESAC, while creating near term cost savings, reducing consumption, and generating renewable energy
- ▶ Cooperative effort to properly guide District goals and investment with a result of savings and GFU offsets
- ▶ Invest in sustainability initiatives with long-range vision and short-term savings
- ▶ Align District's energy efficiency goals with the State of California's and take a **BOLD** leadership position to move towards zero net energy by 2030

